

1/12

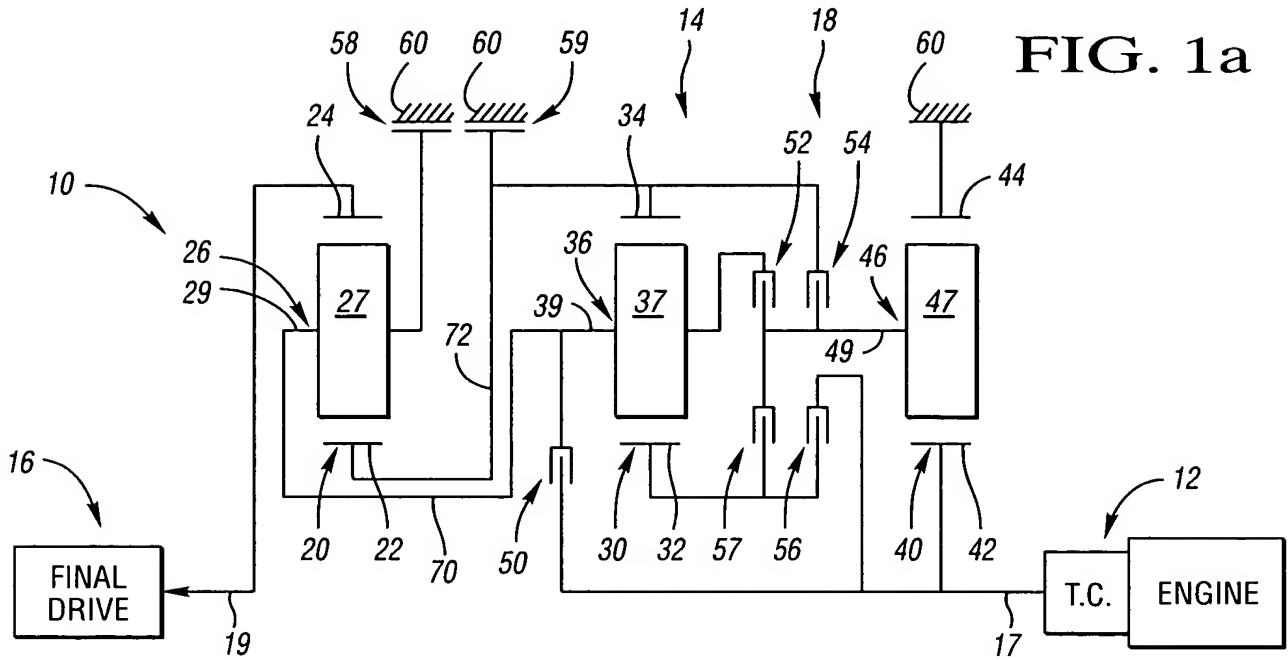


FIG. 1a

FIG. 1b

	RATIOS	50	52	54	56	57	58	59
REVERSE	-7.41			X			X	
NEUTRAL	0.00						X	
1	11.18					X	X	
2	4.69					X		X
2'	4.47				X		X	
3	2.50		X			X		
4'	1.88				X			X
4	1.87		X		X			
5	1.39			X	X			
5'	1.16	X				X		
6	1.00	X			X			
7	0.83	X		X				
8	0.75	X						X

(X = ENGAGED CLUTCH)

RING GEAR TOOTH RATIO: $\frac{N_{R1}}{N_{S1}} = 1.51$, $\frac{N_{R2}}{N_{S2}} = 2.97$, $\frac{N_{R3}}{N_{S3}} = 1.50$

RATIO SPREAD	14.95
RATIO STEPS	
REV/1	-0.66
1/2	2.38
2/3	1.88
3/4	1.34
4/5	1.35
5/6	1.39
6/7	1.20
7/8	1.11

2/12

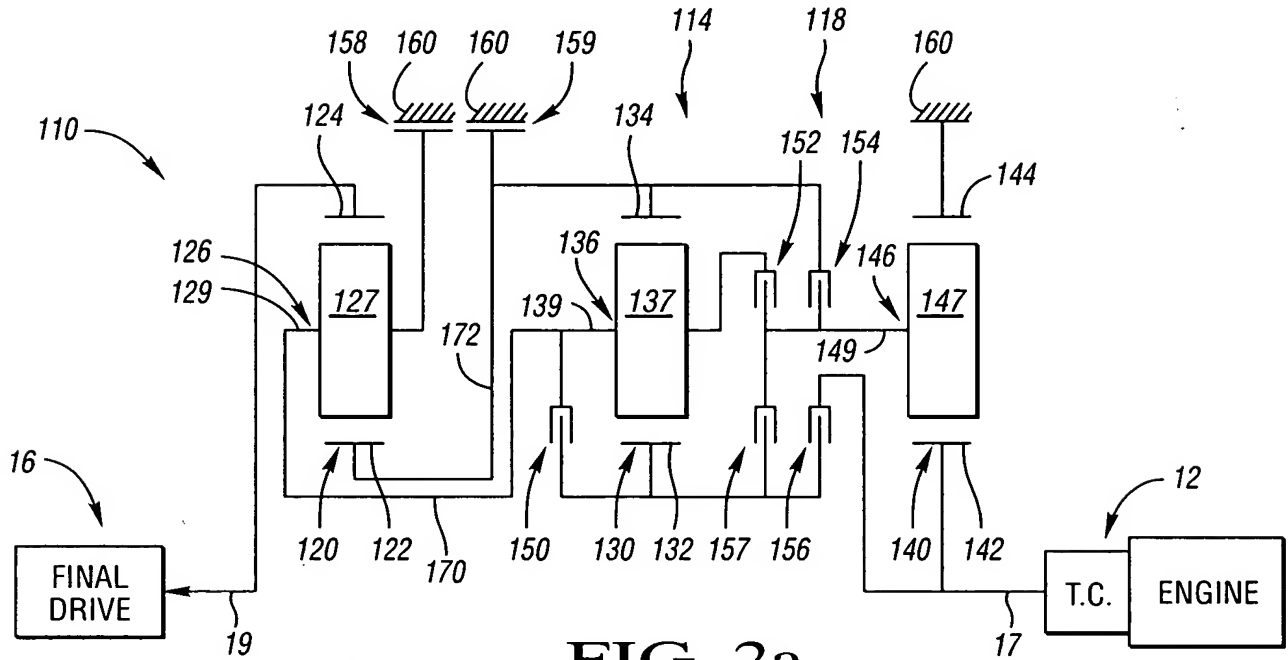


FIG. 2a

FIG. 2b

	RATIOS	150	152	154	156	157	158	159
REVERSE	-6.43			X			X	
NEUTRAL	0.00						X	
1	9.71					X	X	
2	5.69					X		X
3	3.50		X			X		
3'	2.77				X		X	
4	2.27		X					X
5	1.84		X		X			
6	1.62				X			X
7	1.37			X	X			
8	1.00	X			X			

(X = ENGAGED CLUTCH)

RING GEAR TOOTH RATIO: $\frac{N_{R1}}{N_{S1}} = 1.50$, $\frac{N_{R2}}{N_{S2}} = 1.84$, $\frac{N_{R3}}{N_{S3}} = 2.50$

RATIO SPREAD	9.71
RATIO STEPS	
REV/1	-0.66
1/2	1.71
2/3	1.62
3/4	1.54
4/5	1.23
5/6	1.13
6/7	1.18
7/8	1.38



(X = ENGAGED CLUTCH)

FIG. 3b

RATIO SPREAD	9.77
RATIO STEPS	
REV/1	-0.67
1/2	1.72
2/3	1.62
3/4	1.53
4/5	1.24
5/6	1.14
6/7	1.18
7/8	1.38

FIG. 4a

	RATIOS	350	352	354	356	357	358	359
REVERSE	-1.51	X						X
NEUTRAL	0.00							X
1	3.39			X				X
2	2.40				X			X
2'	1.95			X			X	
3	1.38				X		X	
4	1.00				X	X		
5	0.83	X			X			
6'	0.77		X	X				
6	0.71		X		X			
7	0.59	X	X					
8	0.43		X				X	

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 2.22, \frac{N_{R2}}{N_{S2}} = 1.51, \frac{N_{R3}}{N_{S3}} = 2.42$$

RATIO SPREAD	7.97
RATIO STEPS	
REV/1	-0.44
1/2	1.41
2/3	1.74
3/4	1.38
4/5	1.21
5/6	1.17
6/7	1.19
7/8	1.39

5/12

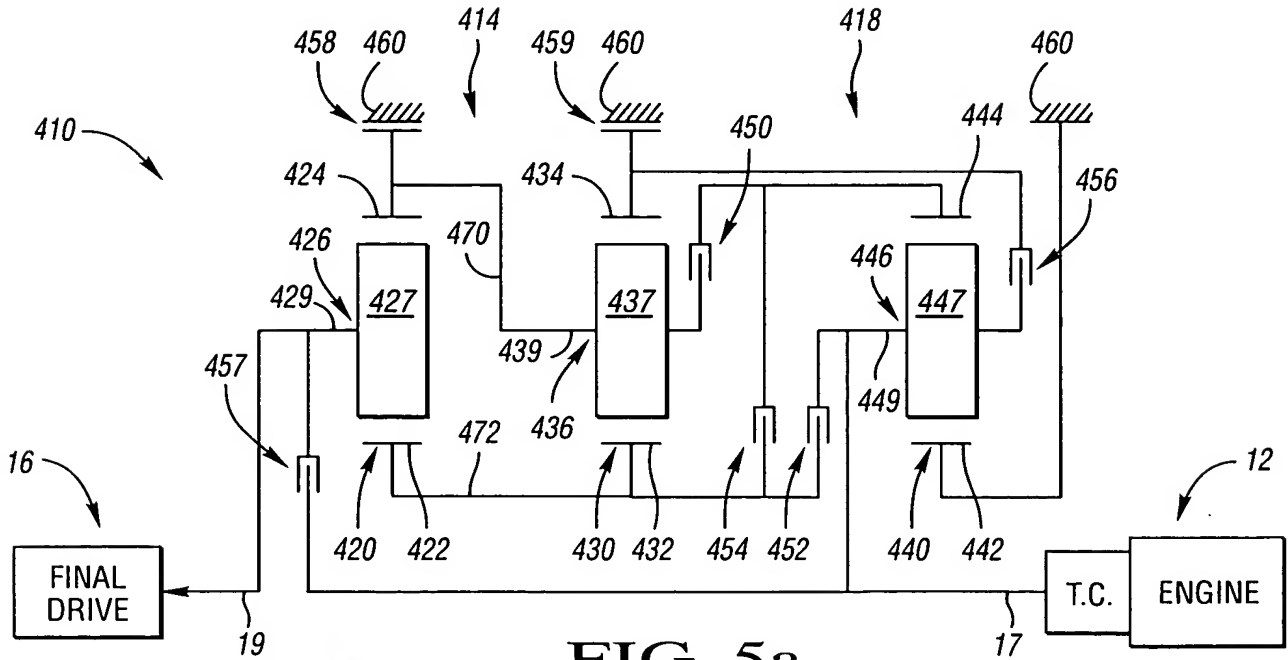


FIG. 5a

FIG. 5b

	RATIOS	450	452	454	456	457	458	459
REVERSE	-1.75				X		X	
NEUTRAL	0.00						X	
1	4.01		X				X	
2	2.64			X			X	
2'	2.09		X					X
3	1.38			X				X
4	1.00			X		X		
5	0.80			X	X			
5'	0.72	X	X					
6	0.66	X		X				
7	0.55	X			X			
8	0.42	X						X

(X = ENGAGED CLUTCH)

RING GEAR
SUN GEAR TOOTH RATIO: $\frac{N_{R1}}{N_{S1}} = 2.28$, $\frac{N_{R2}}{N_{S2}} = 3.00$, $\frac{N_{R3}}{N_{S3}} = 1.92$

RATIO SPREAD	9.56
RATIO STEPS	
REV/1	-0.44
1/2	1.52
2/3	1.92
3/4	1.38
4/5	1.25
5/6	1.22
6/7	1.19
7/8	1.31

FIG. 6a

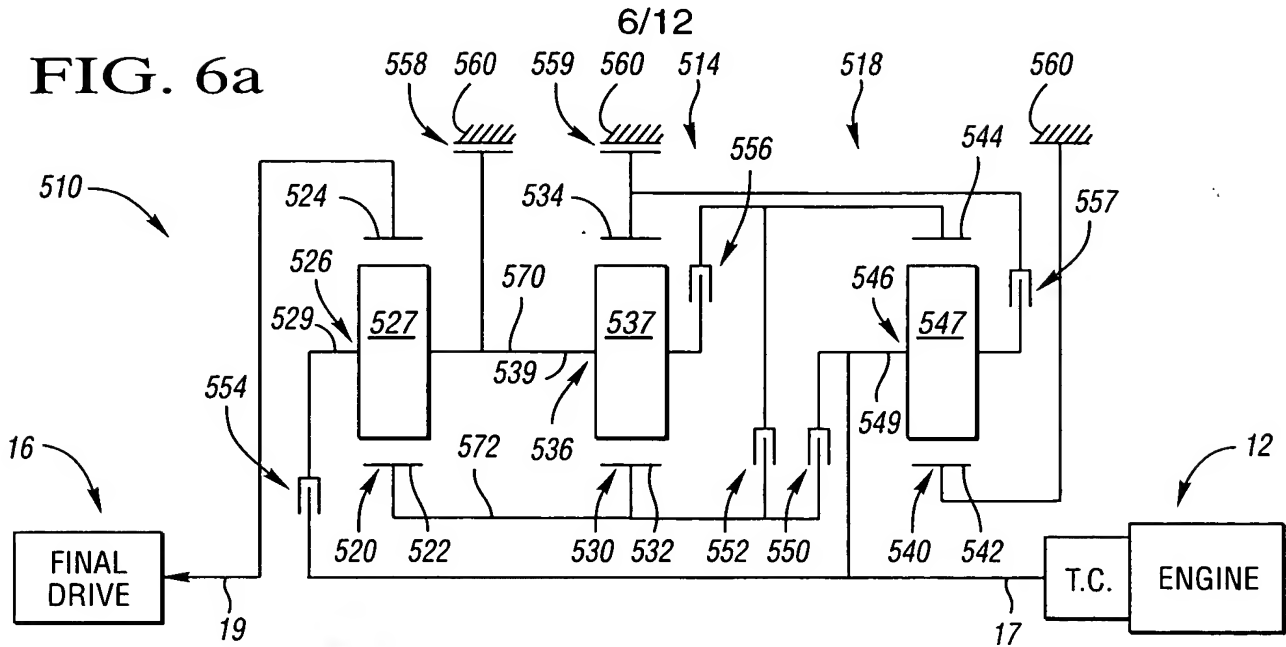


FIG. 6b

	RATIOS	550	552	554	556	557	558	559
REVERSE 2	-2.51	X					X	
REVERSE 1	1.52		X				X	
NEUTRAL	0.00							X
1	6.23	X						X
2	3.79		X					X
3	2.49			X				X
3'	1.67					X	X	
4'	1.51				X			X
4	1.35		X	X				
5	1.00			X		X		
6	0.91		X			X		
7	0.79				X	X		
8	0.61		X		X			
9	0.53	X			X			

(X = ENGAGED CLUTCH)

RING GEAR / SUN GEAR TOOTH RATIO: $\frac{N_{R1}}{N_{S1}} = 1.50$, $\frac{N_{R2}}{N_{S2}} = 2.51$, $\frac{N_{R3}}{N_{S3}} = 1.55$

RATIO SPREAD	11.75
RATIO STEPS	
REV2/1	-0.40
1/2	1.64
2/3	1.52
3/4	1.85
4/5	1.35
5/6	1.39
6/7	1.11
7/8	1.07
8/9	1.15

7/12

FIG. 7a

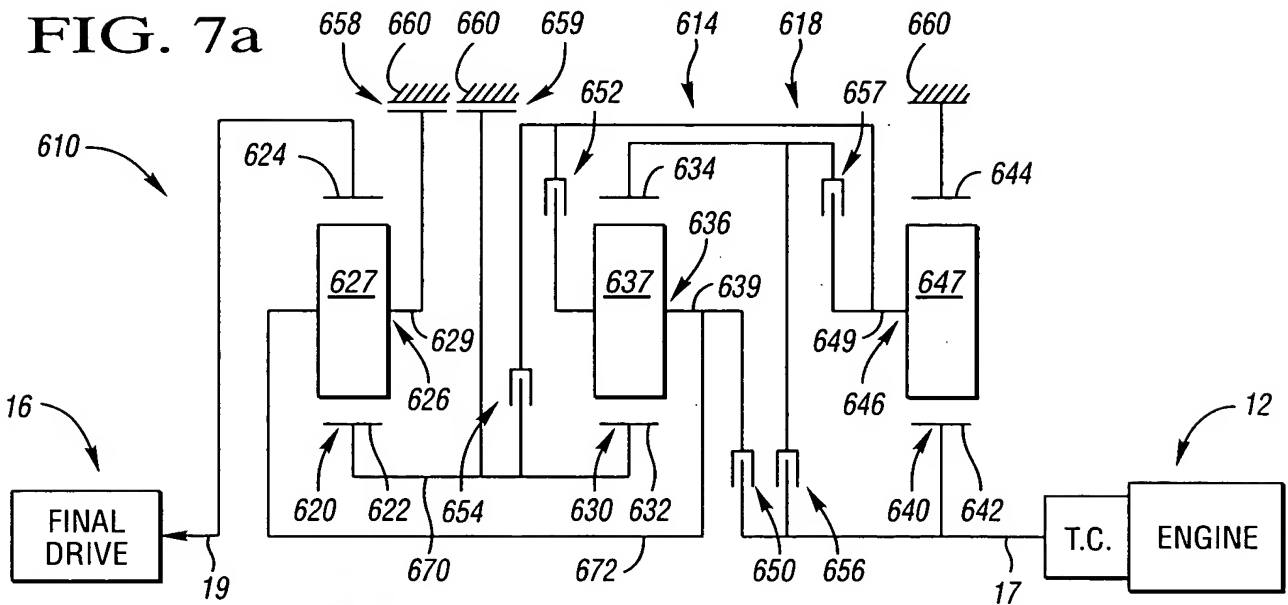


FIG. 7b

	RATIOS	650	652	654	656	657	658	659
REVERSE	-8.89			X			X	
NEUTRAL	0.00						X	
1	4.88					X	X	
2	3.48					X		X
3	3.00		X			X		
4	2.24		X					X
5'	1.69	X				X		
5''	1.63				X		X	
5	1.35		X		X			
6	1.16				X			X
7	1.10			X	X			
8	1.00	X			X			
9	0.82	X		X				
10	0.75	X						X

(X = ENGAGED CLUTCH)

RING GEAR
SUN GEAR TOOTH RATIO: $\frac{N_{R1}}{N_{S1}} = 1.82$, $\frac{N_{R2}}{N_{S2}} = 2.97$, $\frac{N_{R3}}{N_{S3}} = 2.00$

RATIO SPREAD	6.51
RATIO STEPS	
REV/1	-1.82
1/2	1.40
2/3	1.16
3/4	1.34
4/5	1.66
5/6	1.16
6/7	1.05
7/8	1.10
8/9	1.22
9/10	1.09

8/12

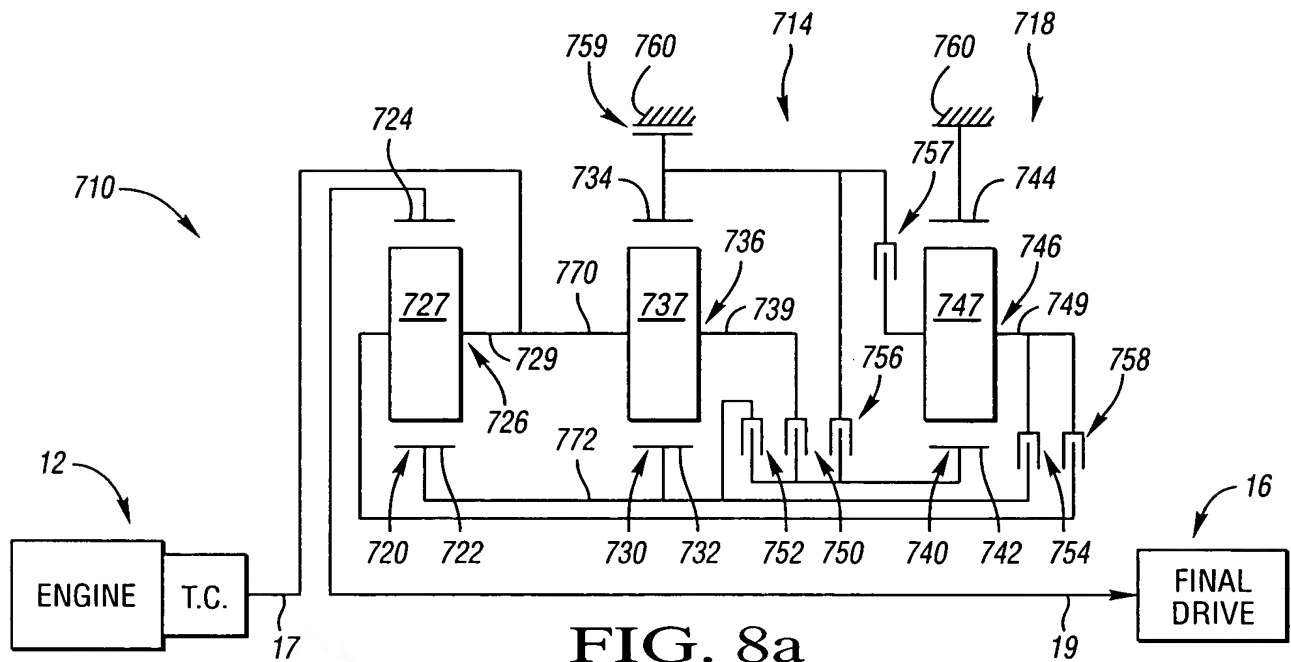


FIG. 8a

FIG. 8b

	RATIOS	750	752	754	756	757	758	759
REVERSE	-9.17				X		X	
NEUTRAL	0.00						X	
1	5.51						X	X
2	3.25	X					X	
3	2.31	X				X		
4'	1.57		X				X	
4	1.48		X			X		
5	1.00			X		X		
6	0.83			X	X			
7	0.81	X		X				
8	0.75		X	X				

(X = ENGAGED CLUTCH)

RING GEAR
SUN GEAR TOOTH RATIO: $\frac{N_{R1}}{N_{S1}} = 2.42$, $\frac{N_{R2}}{N_{S2}} = 2.97$, $\frac{N_{R3}}{N_{S3}} = 2.25$

RATIO SPREAD	7.38
RATIO STEPS	
REV/1	-1.66
1/2	1.70
2/3	1.41
3/4	1.56
4/5	1.48
5/6	1.21
6/7	1.02
7/8	1.08

9/12

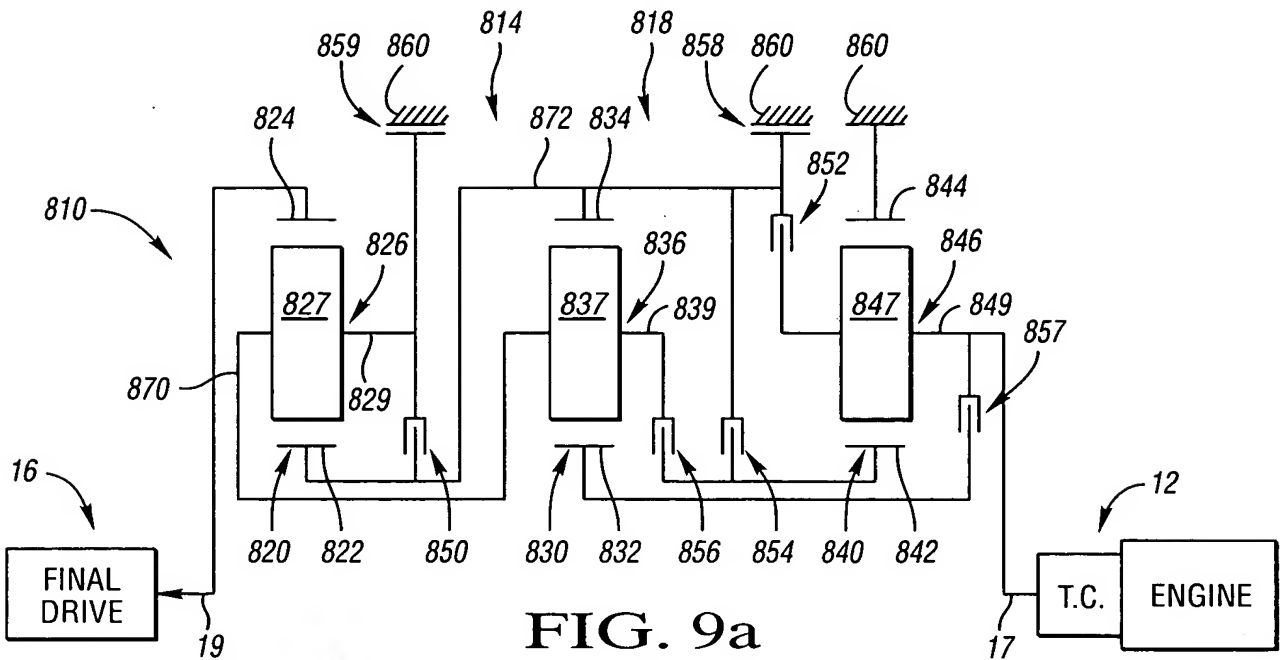


FIG. 9a

	RATIOS	850	852	854	856	857	858	859
REVERSE 2	-2.01		X					X
REVERSE 1	-0.76			X				X
NEUTRAL	0.00							X
1	3.04					X		X
2	1.67					X	X	
3	1.00		X			X		
4	0.60			X		X		
5	0.48				X	X		
6	0.38			X	X			
7	0.29		X		X			
8	0.25				X		X	

FIG. 9b

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.50, \frac{N_{R2}}{N_{S2}} = 2.01, \frac{N_{R3}}{N_{S3}} = 1.63$$

RATIO SPREAD	11.83
RATIO STEPS	
REV2/1	-0.67
1/2	1.80
2/3	1.67
3/4	1.65
4/5	1.26
5/6	1.26
6/7	1.31
7/8	1.14

10/12

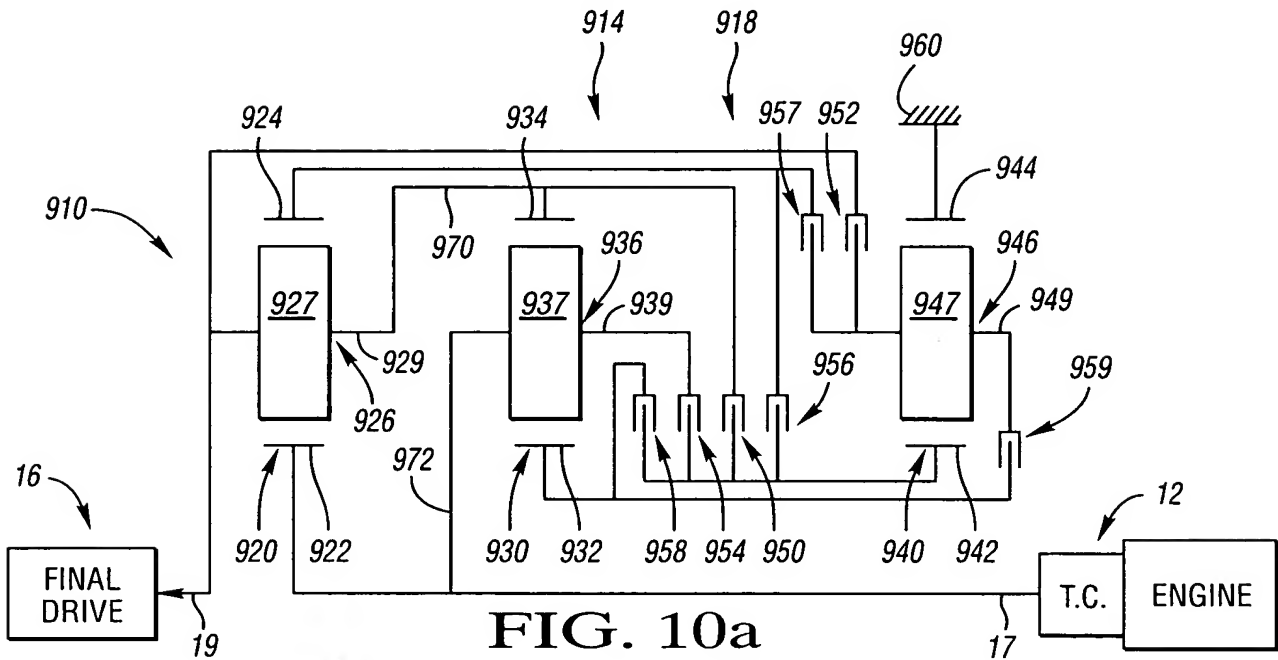


FIG. 10a

FIG. 10b

	RATIOS	950	952	954	956	957	958	959
REVERSE	-3.40		X		X			
NEUTRAL	0.00				X			
1	3.93				X	X		
2	2.76	X				X		
2'	2.50		X	X				
3	1.81			X		X		
4'	1.38		X				X	
4	1.31					X	X	
5	1.00					X		X
6	0.85				X			X
7	0.83			X				X
8	0.75						X	X

(X = ENGAGED CLUTCH)

$\frac{\text{RING GEAR}}{\text{SUN GEAR}}$ TOOTH RATIO: $\frac{N_{R1}}{N_{S1}} = 2.92$, $\frac{N_{R2}}{N_{S2}} = 2.98$, $\frac{N_{R3}}{N_{S3}} = 1.50$

RATIO SPREAD	7.38
RATIO STEPS	
REV/1	-0.86
1/2	1.42
2/3	1.52
3/4	1.38
4/5	1.31
5/6	1.17
6/7	1.02
7/8	1.11

11/12

FIG. 11a

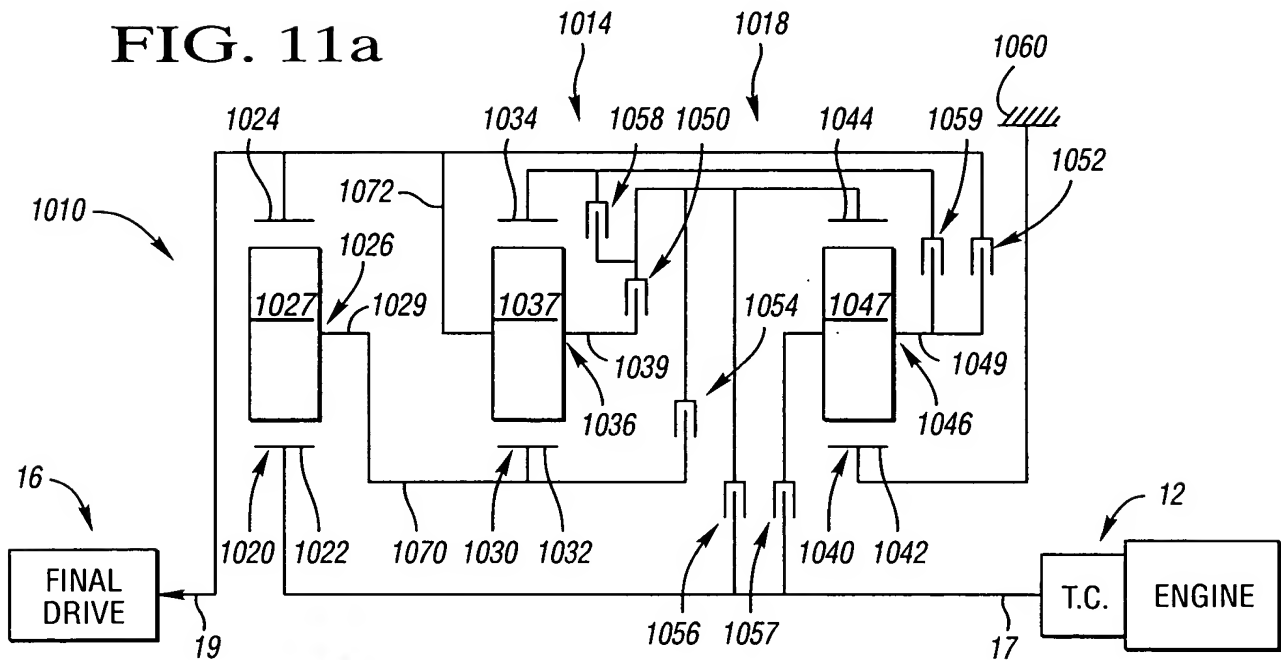


FIG. 11b

	RATIOS	1050	1052	1054	1056	1057	1058	1059
REVERSE	-2.98		X				X	
NEUTRAL	0.00							
1	6.97						X	X
2	3.39	X						X
2'	3.17		X	X				
3	2.14			X				X
4'	1.67		X		X			
4	1.52				X			X
5	1.00					X		X
6	0.64					X	X	
7	0.60	X				X		
8	0.51			X		X		

(X = ENGAGED CLUTCH)

$\frac{\text{RING GEAR}}{\text{SUN GEAR}}$ TOOTH RATIO: $\frac{N_{R1}}{N_{S1}} = 2.25$, $\frac{N_{R2}}{N_{S2}} = 1.84$, $\frac{N_{R3}}{N_{S3}} = 1.50$

RATIO SPREAD	13.69
RATIO STEPS	
REV/1	-0.43
1/2	2.06
2/3	1.59
3/4	1.40
4/5	1.52
5/6	1.57
6/7	1.06
7/8	1.18

12/12

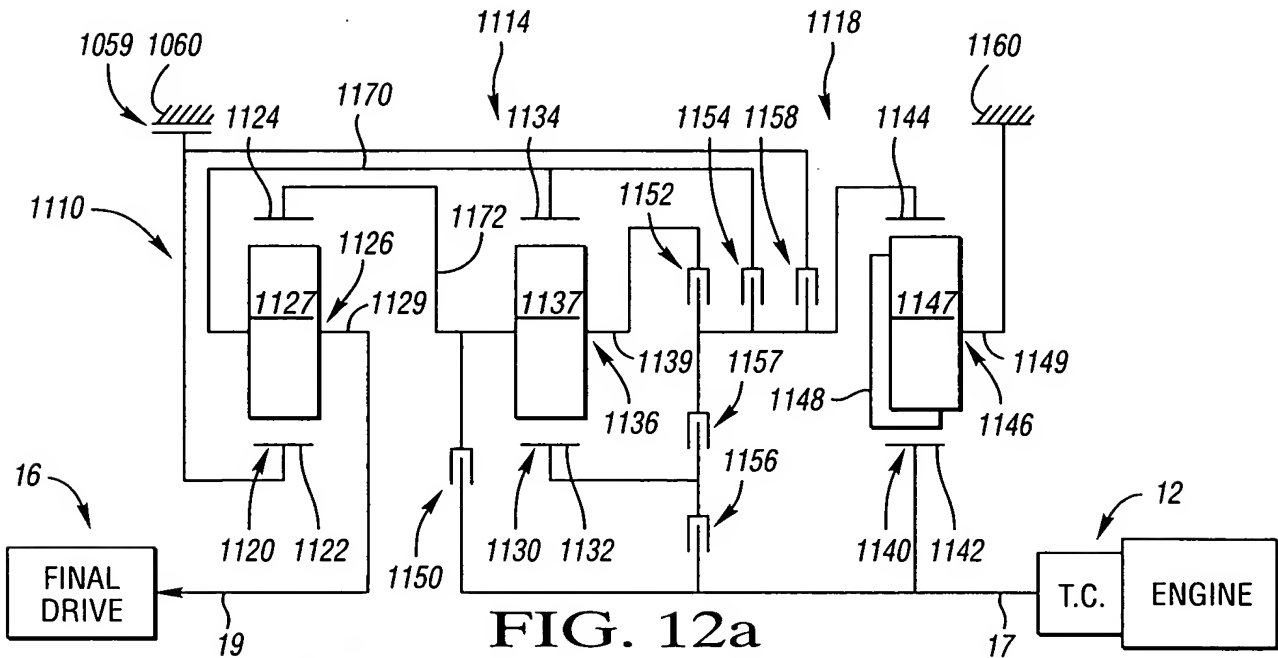


FIG. 12a

FIG. 12b

	RATIOS	1150	1152	1154	1156	1157	1158	1159
REVERSE	-13.92	X				X		
NEUTRAL	0.00							X
1	8.78		X					X
2	5.26					X		X
3	3.50			X				X
4	2.51	X						X
5	1.75	X					X	
5'	1.50				X			X
6	1.31				X		X	
7	1.00	X			X			
8	0.74		X		X			

(X = ENGAGED CLUTCH)

RING GEAR TOOTH RATIO: $\frac{N_{R1}}{N_{S1}} = 2.86$, $\frac{N_{R2}}{N_{S2}} = 2.24$, $\frac{N_{R3}}{N_{S3}} = 3.50$

RATIO SPREAD	11.92
RATIO STEPS	
REV2/1	-1.58
1/2	1.67
2/3	1.50
3/4	1.40
4/5	1.43
5/6	1.33
6/7	1.31
7/8	1.36